EXHIBIT E

United States Patent No. 10,292,011 (Cisco)

US Patent No. 10,292,011 B2	**CiscoWave 2 Access Points**
11. A method in a location network expanse, the method comprising:	*CiscoWave 2 Access Points are a "sending data processing system".*
periodically beaconing outbound a broadcast unidirectional wireless data record from at least one sending data processing system for physically locating in a region of the sending data processing system one or more receiving user carried mobile data processing systems, the broadcast unidirectional wireless data record received directly from the sending data processing system in each receiving user carried mobile data processing system of the one or more receiving user carried mobile data processing systems, and including:	**Managing BLE Beacons in Cisco Wave 2 and 802.11ax Access Points** The BLE Management feature supports both sending of beacons and listening to beacons from small battery-powered devices. BLE beacons support the following profiles: • iBeacon profile • Eddystone-URL profile • Eddystone-UID profile • viBeacon (contains up to 5 iBeacons internally) Bluetooth-enabled smartphones that are nearby can pick up the transmission from beacons and communicate with the back-end server to push advertisements or other information. The transmission power range is from -21 dBm to +5 dBm in increments of 3 dB. You can also configure the broadcast frequency in the range of 100 milliseconds to 10000 milliseconds. https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html
no physical location coordinates of the sending data processing system,	*The Major and Minor fields do not constitute "physical location coordinates". Rather, the Major and Minor fields act as sub-names to the UUID (which is identical across all beacons managed by an app developer). Moreover, if the beacon is moved to a different physical location, the Major and Minor fields will continue to be identical absent reconfiguration of the beacon.*

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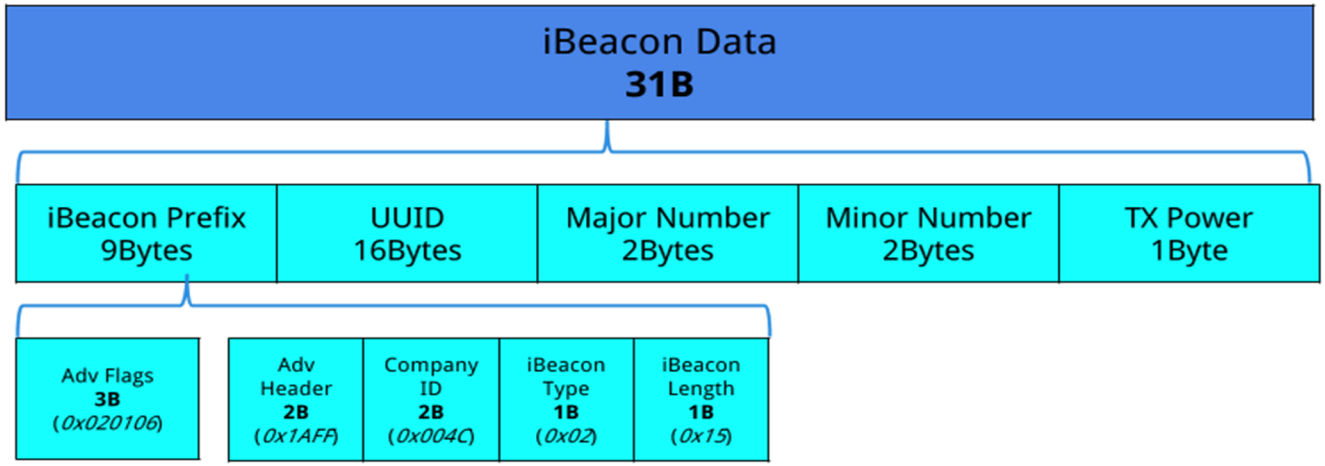
a data field containing a signal strength of the sending data processing system, and	The AP's BLE firmware supports the following beaconing profiles:
	• iBeacon: This is Apple's iBeacon broadcast format. In this profile, you can configure the following broadcast data:
	  • UUID (16 bytes value, which can uniquely identify an organization)
	  • Major number (2 bytes value, which can identify a unique store of the organization)
	  • Minor number (2 bytes value, which can identify a particular product or section)
	Typical use cases are iOS or Android apps that use Major, Minor, or UUID to show local store data to smartphone user, when they walk close to a Cisco Wave 2 or Catalyst AP.
	
	https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html
	
	 
	
	https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/
	
	The TX Power constitutes the "data field containing a signal strength of the sending data processing system".

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application context identifier data identifying location based content for presenting by a location based application of the receiving user carried mobile data processing system to a user interface of the receiving user carried mobile data processing system	*The Major and Minor fields constitute "application context identifier data identifying location based content for presenting by a location based application of the receiving user carried mobile data processing system to a user interface of the receiving user carried mobile data processing system […]".*
	
	The AP's BLE firmware supports the following beaconing profiles:
	• iBeacon: This is Apple's iBeacon broadcast format. In this profile, you can configure the following broadcast data:
	  • UUID (16 bytes value, which can uniquely identify an organization)
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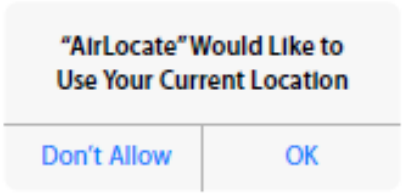
upon the receiving user carried mobile data processing system determining with a local memory maintained location based configuration monitored with background processing of the receiving user carried mobile data processing system during mobility of the receiving user carried mobile data processing system anticipating receipt of the broadcast unidirectional wireless data record having the application context identifier data in response to a user activating the location based application with the user interface of the receiving user carried mobile data processing system wherein the location based application:	*Apple devices implement the iBeacon protocol. Apps implementing iBeacon region APIs cause the iOS operating system to request user permission to use location services.* **Privacy and Location** Because iBeacon is part of Core Location, the same user authorization is required in order to be used. Users will see the same location authorization alert when an application attempts to use the iBeacon APIs:  Applications that use beacon region APIs in CoreLocation will appear in the Settings app under Privacy > Location Services and users can allow or deny an application's access to iBeacon functionality at any time. Furthermore, any Bluetooth packets that are associated with iBeacon are excluded from the CoreBluetooth APIs. Apple, "Getting Started with iBeacon", Version 1.0 (June 2, 2014), downloaded from https://developer.apple.com/ibeacon/Getting-Started-with-iBeacon.pdf on Oct. 26, 2020 *The CoreLocation service is (like most, if not all, operating system functions) a background activity. Granting permission through the UI above causes the app to be registered within iOS CoreLocation services to receive iBeacon messages from beacons.*

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invokes a location based API of the receiving user carried mobile data processing system for the location based configuration anticipating the receipt of the broadcast unidirectional wireless data record having the application context identifier data,	*As shown above, a location-based application invokes the CoreLocation API in the iOS operating system, which involves a request for user permission.*
is notified upon the receipt of the broadcast unidirectional wireless data record having the application context identifier data configured in the location based configuration, and	In addition to the UUID, an application can optionally supply the major and minor fields to further specify a beacon region to be monitored. Continuing with our retail chain example, if the app only specifies a UUID for the beacon region then it will be notified when the user enters or leaves *any* of the retail stores. Since the major field is being used to determine specific stores, if the user only wanted to be notified when entering a specific store, the application could configure the beacon region using the UUID + major value. Or perhaps the user is only interested in being notified when they have entered a specific department in that store. In that case the app would configure the beacon using UUID + major + minor values. This level of granularity is up to the app developer and can be specified dynamically at runtime. As with the existing region monitoring, when the user enters or exits the beacon region, the application will be notified. If the application is not currently running (for example, if it was terminated due to memory pressure on the device), then the application is launched in the background and the notification delivered. One important consideration is in iOS 7 if the user explicitly disallows Background App Refresh (either globally or specifically for your app) then your app will no longer receive region monitoring notifications. It can continue to use the ranging APIs, however. Apple, "Getting Started with iBeacon", Version 1.0 (June 2, 2014), downloaded from https://developer.apple.com/ibeacon/Getting-Started-with-iBeacon.pdf on Oct. 26, 2020

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presents the location based content to the user interface of the receiving user carried mobile data processing system, the location based content originating from another data processing system that is remote to both the sending data processing system and the receiving user carried mobile data processing system.	• Are you looking to engage customers based on where they are in the venue or provide an indoor navigation experience? You might want to look into beacon technology along with apps that provide the two-way communication. What would all this look like in action? Imagine going to the doctor's, getting prompted to join the high-speed wireless network (Wi-Fi) and open the healthcare app (Wi-Fi). The app greets you and automatically checks you in when you're in the waiting room (Wi-Fi location) and shows you where your appointment is. It then opens a map of the facility and provides directions for where you need to go (beacons.) The doctor steps in with her iPad and pulls up your medical record. She then enters the prescription you need (Wi-Fi.) The app once again navigates you to the pharmacy to pick up your prescription (beacons), and your name is called for the pick-up, as they know you entered (Wi-FI location). Meanwhile, IT passes the Wi-Fi analytics to the operations department to show peak congestion times in the pharmacy to ensure there are enough techs working on prescriptions during these times (Wi-Fi location analytics.) https://blogs.cisco.com/networking/indoor-wifi-location-and-beacons-better-together